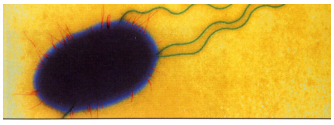
watersafe®

Science Project Kit

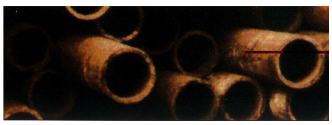
Hypothesis

Contaminants



BACTERIA

Bacteria and many other potentially dangerous microbes commonly found in our environment should not be present in our drinking water. Thousands of cases of bacterial illness occur every year, many of them fatal.



LEAD

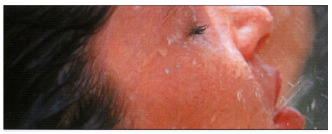
Many homes and buildings have pipes and plumbing fixtures that contain lead. Lead can leach from pipes into household water making this plumbing a major source of water contamination and a potential source of toxic lead poisoning.

PESTICIDES

Pesticides are deadly chemicals used to eliminate weeds, insects and other harmful elements in crops. Their pervasive use, however, has produced its own harm. Now it is not uncommon to find pesticide contamination in our drinking water.

NITRATES & NITRITES

A common yet incredibly harmful pollutant especially to children and small animals. When animal and human wastes or field fertilizers come in contact with water, they show up as nitrates and nitrites. Both are serious contaminants because they effect the very core of human life.



pH

Knowing the pH level of your water can help you prevent secondary effects. If the acidity of your water is too high, corrosion can leach out lead from pipes and plumbing as well as damage your water supply system and water heater.

HARDNESS

Water hardness is primarily caused by calcium and magnesium compounds. These chemicals are not easily detected, but the numerous negative effects can be unpleasant and costly. When you have hard water it can take twice as much soap to do your laundry.

CHLORINE

The consumption of chlorine (a drinking water disinfectant) in very small amounts most likely will not cause you serious harm. What may be harmful, however, are the by-products including chloroform that chlorine produces when mixed with organic matter.

Pesticides

Record the results for each sample as negative or positive for pesticide detection.
RECORD RESULTS IN APPROPRIATE COLUMN.

Water Sample	Negative	Positive
A.		
B.		
C.		
D.		
E.		
F.		
G.		
H.		
I.		
J.		

Lead

Record the results for each sample as negative or positive for pesticide detection.
RECORD RESULTS IN APPROPRIATE COLUMN.

Water Sample	Negative	Positive
A.		
B.		
C.		
D.		
E.		
F.		
G.		
H.		
I.		
J.		

Nitrate/Nitrite

Record the results of your sample in ppm (parts per million units).
RECORD RESULTS IN APPROPRIATE COLUMN

Water Sample	Low Nitrite 0 ppm	0.5 ppm	2.0 ppm	5.0 ppm	10.0 ppm	20.0 ppm	High Nitrite 50 ppm
A.							
B.							
C.							
D.							
E.							
F.							
G.							
H.							
I.							
J.							

Nitrite

Record the results of your sample in ppm (parts per million units).
RECORD RESULTS IN APPROPRIATE COLUMN

Water Sample	Low Nitrite 0 ppm	0.15 ppm	0.3 ppm	1.0 ppm	1.5 ppm	3.0 ppm	High Nitrite 10 ppm
A.							
B.							
C.							
D.							
E.							
F.							
G.							
H.							
I.							
J.							

Chlorine

Compare your results to the color chart in the instruction booklet.
Record the level of chlorine in your sample in ppm (parts per million units).
RECORD RESULTS IN APPROPRIATE COLUMN.

Water Sample	0 ppm	2.0 ppm	4.0 ppm	10.0 ppm
A.				
B.				
C.				
D.				
E.				
F.				
G.				
H.				
I.				
J.				

Bacteria

Record the results for each sample as negative or positive for bacteria detection.
RECORD YOUR RESULTS IN APPROPRIATE COLUMN.

Water Sample	Negative	Positive
A.		
B.		
C.		
D.		
E.		
F.		
G.		
H.		
I.		
J.		

pH

Record the results of your sample in pH units based on the color chart in the instruction booklet.
RECORD RESULTS IN APPROPRIATE COLUMN.

Water Sample	6.0	6.5	7.5	8.5	10
A.					
B.					
C.					
D.					
E.					
F.					
G.					
H.					
I.					
J.					

Hardness

Compare your results to the color chart in the instruction booklet.
Record the results of your sample in ppm (parts per million units).
RECORD RESULTS IN APPROPRIATE COLUMN.

Water Sample	0 ppm	50 ppm	120 ppm	250 ppm	425 ppm
A.					
B.					
C.					
D.					
E.					
F.					
G.					
H.					
I.					
J.					

Conclusions

Water Test Desired Values

EPA maximum contaminant levels or guideline standards

Bacteria	None
Lead	Below 15 ppb
Pesticides (atrazine/simazine)	Below 3 ppb atrazine Below 4 ppb simazine
Total Nitrate/Nitrite	Below 10 ppm
Nitrite	Below 1 ppm
pH	6.5 to 8.5
Total Hardness	50 ppm or less
Total Chlorine	Below 4 ppm